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170

TRANSLATION FROM RUSSIAN. GROKHOVSKAYA, I. M., IGNATOVICH, V. F., and SILOROV, V. Ye. * (1966). Ticks of the superfamily Ixodoidea and Rickettsia prowazekii. Tezisy Dokl. 1. Akarol. Soveshch., pp. 74-75.

1. The following has been studied: the susceptibility of the superfamily Ixodoidea to Rickettsia prowazekii by different means of infection (feeding on infected guinea pigs, feeding through membrane, and introduction of rickettsiae directly into the tick body cavity), duration of rickettsial preservation within the body of infected ticks, and mechanism of infection transmission by ticks to healthy animals.

2. Dermacentor pictus, D. nuttalli, Ornithodoros lahorensis, Rhipicephalus turanicus, and Hyalomma anatolicum can become infected with R. prowazekii during bloodmeal. Of 90 tick batches examined in bioassays, 17 were positive after feeding on infected guinea pigs. By this means of infection, engorged adult ticks preserved rickettsiae in our tests for 15 days. Different degrees of susceptibility to R. prowazekii have been recorded in ticks. The most susceptible proved to be D. pictus (4 of 12 batches positive) and C. lahorensis (9 of 29 batches positive). H. asiaticum did not become infected with rickettsiae during feeding on guinea pigs (all 15 batches proved to be negative).

3. O. lahorensis, O. moubata, O. papillipes, H. asiaticum, and Argas persicus, when fed through a membrane on blood infected with a suspension from a chick embryo rickettsial culture, showed a high susceptibility (17 of 21 batches were positive in bioassay). Rickettsiae that reproduced within ticks survived in them for about 60 days (observation period).

4. Tests on parenteral infection of H. asiaticum, C. lahorensis, and D. pictus with R. prowazekii have shown that the tick body cavity is a favorable medium for rickettsial development despite the ticks' susceptibility during bloodmeal. Moreover, rickettsiae reproduced actively within cellular elements of the hemolymph. This was proved by morphological investigation as well as by titration of R. prowazekii that survived within ticks for different periods after the infection. By this means of infection, rickettsiae survived in unfed H. asiaticum for 116 days and in O. lahorensis for 105 days (observation periods).

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5. After comparison of the infection in ticks by different introduction means of the agent, we assume that rickettsiae can not only be introduced during a bloodmeal on an infected animal but also can later develop within the tick body.

6. From previous data, ticks infected with R. prowazekii, do not transmit the latter transovarially to their progeny and also do not infect laboratory animals during feeding. We succeeded in inducing infection in animals only by scarification of skin into which infected ticks (H. asiaticum) were crushed.